

Appl. No. 09/829,700
Amdt. Dated June 3, 2005
Reply to Office action of January 3, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 1. (currently amended) A method for individualizing a hearing aid
2 in adaptation to a loudness perception of an individual, said method
3 comprising the steps of:

4 [[[-]]] measuring and quantifying loudness perception parameters of
5 the individual, weighted by a positive first factor;
6 [[[-]]] weighting of normal loudness perception parameters by a
7 positive second factor;
8 combining the weighted loudness perception parameters of the
9 individual with the weighted normal loudness perception
10 parameters to define a weighted loudness parameter; and
11 using the weighted loudness parameter for adjusting the hearing
12 aid.

1 2. (previously presented) The method as in claim 1, wherein
2 compression and/or amplification is/are adjusted in the hearing aid,
3 for which purpose the compression and, respectively, the amplification
4 are each determined as a function of frequency.

1 3. (currently amended) A method for individualizing a hearing
2 aid in adaptation to a loudness perception of an individual, said
3 method comprising the steps of:

4 adjusting the hearing aid using ~~one or~~ both of (1) measured and
5 quantified loudness perception parameters of the individual
6 weighted by a first factor and (2) normal loudness
7 perception parameters weighted by a second factor; and
8 adjusting compression and/or amplification in the hearing aid, for
9 which purpose the compression and, respectively, the
10 amplification are each determined as a function of
11 frequency, wherein

12 for determining the compression, the loudness perception of the
13 individual is quantified by means of a HVLS/LOHL factor
14 which is determined by loudness scaling at a minimum of one
15 frequency.

1 4. (previously presented) The method as in claim 3, wherein the
2 HVLS/LOHL factor is modeled using the equation $\log_{10}(\alpha) = a_a \times HV/HL +$
3 $b_a \times \log(HV/HL) + VP_{consta}$ where
4 α = a gradient of the loudness function,
5 HV/HL = a hearing loss in dB,
6 a_a , b_a = constant function parameter, and
7 VP_{consta} = an individual function parameter which adapts the
8 HVLS/LOHL factor to data sampling points α_1 , α_2 , α_3 , ...,
9 and that VP_{consta} is determined on the basis of a loudness
10 scaling performed at a minimum of one frequency.

1 5. (previously presented) The method as in claim 2, wherein for
2 determining the amplification, the loudness perception of the
3 individual is quantified by means of an HVL0/HLL0 factor which is
4 defined by loudness scaling at a minimum of one frequency.

1 6. (previously presented) The method as in claim 5, wherein the
2 HVL0/HLL0 factor is modeled using the equation
3 $L_0 = a_L \times HV/HL + b_L \times \log(HV/HL) + VP_{constL}$,

4 where
5 L_0 = a level of loudness=0,
6 HV/HL = a hearing loss in dB,
7 a_L , b_L = a constant function parameter, and
8 VP_{constL} = an individual function parameter which adapts the
9 HL0/HLL0 function to the data sampling points L_{01} , L_{02} , L_{03} , ...,

10 And that VP_{constL} is determined on the basis of a loudness scaling
11 performed at a minimum of one frequency.

1 7. (previously presented) The method as in one of the claims 4 to
2 6 and 11, wherein the hearing loss is used for determining the
3 frequencies at which loudness scaling is performed.

1 8. (previously presented) The method as in one of the claims 3 to
2 6 and 10 to 11, wherein the value of the weighted factors depends on
3 the assumed and/or determined accuracy of the loudness scaling data.

1 9. (previously presented) The method as in claim 8, further
2 comprising the selection of a value of 1/3 for the first factor and/or
3 a value of 2/3 for the second factor.

1 10. (previously presented) The method as in claim 2, wherein, for
2 determining the compression, the loudness perception of the individual
3 is quantified by means of a HVLS/LOHL factor which is determined by
4 loudness scaling at a minimum of one frequency.

1 11. (previously presented) The method as in claim 10, wherein the
2 HVLS/LOHL factor is modeled using the equation $\log_{10}(\alpha) = a_a \times HV/HL +$
3 $b_a \times \log(HV/HL) + VP_{consta}$ where

4 α = a gradient of the loudness function,

5 HV/HL = a hearing loss in dB,

6 a_a , b_a = constant function parameter, and

7 VP_{consta} = an individual function parameter which adapts the
8 HVLS/LOHL factor to data sampling points α_1 , α_2 , α_3 , ... ,

9 and that VP_{consta} is determined on the basis of a loudness
10 scaling performed at a minimum of one frequency.

1 12. (previously presented) The method as in claim 1, further
2 comprising the selection of a value of 2/3 for the first factor and/or
3 a value of 1/3 for the second factor.

1 13. (new) A method for individualizing a hearing aid in adaptation
2 to a loudness perception of an individual, said method comprising the
3 steps of:

4 measuring and quantifying loudness perception parameters of the
5 individual, weighted by a first factor;
6 weighting of normal loudness perception parameters by a second
7 factor;

8 combining the weighted loudness perception parameters
9 of the individual with the weighted normal loudness
10 perception parameters to define a weighted loudness
11 parameter; and

12 using the weighted loudness parameter for adjusting the hearing
13 aid,

14 wherein compression and/or amplification is/are adjusted in the
15 hearing aid, for which purpose the compression and,
16 respectively, the amplification are each determined as a
17 function of frequency, and

18 wherein for determining the amplification, the loudness perception
19 of the individual is quantified by means of one of an
20 HVL0/HLL0 factor and an HVLS/LOHL factor, which is defined
21 by loudness scaling at a minimum of one frequency.